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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,543	12/20/2001	Hiroshi Nakamoto	1344,1081	2192

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STAAS & HALSEY LLP
700 11TH STREET, NW
SUITE 500
WASHINGTON, DC 20001

EXAMINER

MOSKOWITZ, NELSON

ART UNIT

PAPER NUMBER

3663

DATE MAILED: 02/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,543

Applicant(s)

NAKAMOTO ET AL.

Examiner

Nelson Moskowitz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12/20/01.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

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1. Claims 1, 8, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidmann ('306), or Suyama ('213), or Deguchi et al ('721), when taken with Emori et al (OFC '99) or Walker (OSA) .

In determining obviousness, the following factual determinations are made:

- a. first, the scope and content of the prior art;
- b. second, the difference between the prior art and the pending claims.
- c. third, the level of skill of a person ordinary skill in this art; and
- d. fourth, whether other objective evidence may be present, which indicates

obviousness or nonobviousness. See, e.g., *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d 1614, 1616 (Fed. Cir. 1999) (citing *Graham v. John Deere Co.*, 282 US 1, 17-18, USPQ 456, 466-67 (1966)).

Objective evidence includes long felt but unmet need for the claimed invention, failure of others to solve the problem addressed by the claimed invention, and not other factors. See, e.g., *Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 Fed. 1573, 1574-76, 22 USPQ 744, 745-47 (Fed. Cir. 1984).

a) In examining the scope and content of the prior art it is found that Heidmann ('306), Suyama ('213), and Deguchi et al ('721) disclose an optical transmission method with fiber optic amplifiers wherein the supervisor signal is imposed on the pumping light supplied to the amplifying medium. See, inter alia, Heidmann's figures 1-2, abstract, and columns 1, 2 and 4; Suyama abstract; Deguchi et al col. 6, lines 18-38. Thus, these references show it to be

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ubiquitous in the prior art to place supervisory signals on the pump radiation for optical fiber amplifiers. They do not however disclose Raman amplification, disclosing DFA, and do not explicitly disclose WDM operation.

b) Emori et al (OFC '99) and Walker disclose the common alternative use of Raman amplifiers as opposed to doped fiber amplifiers, and the benefits of WDM signal transmission.

Third, under *Deere* the level of ordinary skill in this art may be determined by the analysis of the Court as set forth in *Environmental Design Ltd. v. Union Oil Co.* 713 F.3d 693, 218 USPQ 865-69 (Fed. Cir. 1983) cert. denied, 464 U.S. (1984), where the court listed these factors relevant to the determination of the level of ordinary skill: type of problems encountered in the art, prior art solutions, rapidity of innovations, sophistication of technology, and educational level of the active worker in the field.

The types of problems encountered in the art involve wavelength multiplexing systems with Raman and/or DFA systems, the need for supervisory signals to control the complex systems, and how to provide inexpensive, accurate and reliable signals.

Innovation in this field has been very fast as can be seen from virtual birth of this field in the 1950s to its present highly complex and sophisticated status.

Prior art solutions include supervisory signals on pumping light, and pumping for Raman amplifiers and/or DFA.

Skilled artisans generally have a graduate level education and over three (3) years of experience, as can be seen from published articles in the major journals in this field.

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To date, no secondary consideration (objective evidence) has been presented.

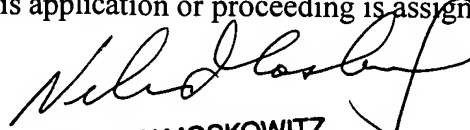
Therefore, the use of Raman pumps and WDM for fiber amplifier systems would have been obvious to one skilled in the art for the aforesaid reasons.

2. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidmann ('306), or Suyama ('213), or Deguchi et al ('721), when taken with Emori et al (OFC '99) or Walker (OSA), all as set forth above, when taken with Emori et al (OECC) or Grubb et al ('922).

Emori et al (OECC) and Grubb et al teach the common use of plural pump wavelengths to pump Raman amplifiers operating in WDM modes. Therefore, as the use of plural pump wavelengths is necessary to obtain the desired WDM operation, such use would have obvious to one skilled in this art.

3. References F and N (PTO-892) are cited to show prior art supervisory signals for Raman amps, and the joint use of supervisory signals with pumps (16) for fiber optic amplifier systems.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Moskowitz whose telephone number is 703-306-4165. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black, can be reached on (703) 306-4171. The before final fax phone number for the organization where this application or proceeding is assigned is 703-872-9326. The after final fax phone number for the organization where this application or proceeding is assigned is 703-872-9327.


NELSON MOSKOWITZ
PRIMARY EXAMINER